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ABSTRACT

This paper describes the development and use of the Casey-Monahan Screening Instrument, designed to assess kindergarten readiness. The instrument consisted of various tests and evaluation procedures chosen from previously published tests. The instrument was designed to measure ability in five areas: (1) motor integration and motor development, (2) visual-motor coordination, (3) auditory discrimination and perception, (4) visual motility and eye dominance, and (5) social and intellectual development. Subjects for the field test of the instrument were 350 prekindergarten children from five schools in a middle class urban California school district. Raw scores on the screening instrument were compared to raw scores on both the Metropolitan Readiness Test and the Test of Basic Abilities. Significant positive correlations between these scores were obtained. Scores on the screening instrument were also similar to teacher judgments of the children obtained after three and one half months of school. In addition to a description of the use of the screening instrument, the paper includes a review of the literature on readiness and readiness evaluation. (BD)

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A PRE-KINDERGARTEN SCREENING

By

Jean Marie Casey

January 1976

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ABSTRACT

A PRE-KINDERGARTEN SCREENING

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The purpose of this project was to design and demonstrate the use of a pre-kindergarten screening instrument. Various tests and evaluation procedures were selected in five major areas of learning abilities specified as (1) motor integration and motor development, (2) visual-motor coordination, (3) auditory discrimination, (4) visual-motility and eye dominance, and (5) social development (this includes general intellectual functioning). These classifications were selected because of their importance to school readiness.

This was action research. The subjects were 350 pre-kindergarten youngsters from five schools in a middle-class urban Southern California school district.

Raw scores of the screening instrument developed were compared to raw scores of the Metropolitan Readiness Test and to the Test of Basic Abilities. A positive Pearson R correlation significant at the .01 level was obtained in both cases.

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Chapter 1

INTRODUCTION

Early Childhood Education is definitely a major concern today. Government funding attests to the public's concern with providing children with the best possible education during the early developmental years. Recent legislation in California that will permit school entrance at age five regardless of time of year means that school programs will have to be developed to accomodate these youngsters. (Assembly Bill 3976, California State Assembly, 1975)

In September 1973, 1,010 elementary schools in 800 school districts in California began Early Childhood Education programs under Senate Bill 1302. With this bill Early Childhood Education became a top priority commitment of the State Department of Education. ECE programs under this bill call for individualized programs for five-eight year old children based on their individual interests, needs and abilities. A pre-kindergarten screening instrument is one way to determine these interests, needs and abilities.

Statement of the Problem

The purpose of this project was to construct, develop and utilize a preliminary screening instrument that would be inexpensive, simple to administer and provide teachers with accurate information about children entering kindergarten. This screening instrument would be used to: (1) identify the success level of incoming kindergarten children; (2) provide relevant information concerning the child's educational needs; and (3) provide data that teachers could use to individualize their programs.

Significance of the Project

Many years of clinical study has led authorities such as De Hirsch, Jansky, and Langford (1966) whose conclusion that early identification of learning difficulties could have eliminated the need for later remedial measures. An effective screening instrument would provide this early identification.

In order to individualize programs, each child's needs must be identified. According to Frazier (1966)

> Many of the children who enter kindergarten may lack the perceptual-motor skills, conceptual skills or psycho-motor skills which should be present to ensure learning can take place. Children with such needs may be unable to benefit fully from the instruction offered. To admit children to school with

> unknown defecits is to start a failure cycle based upon lack of readiness compared to other children. (pp. 4-5)

Likewise it is important that kindergarten teachers in planning an individualized program resort to pre-screening data to determine prior learning that children may already have mastered in pre-school, through the media, and through home experiences.

School principals also need assessment data on youngsters entering kindergarten in order to counsel parents about proper school placement. These data are needed to determine which children would benefit from a pre-kindergarten program stressing activities designed to build-up small and large muscle coordination and which children should be placed in an accelerated program or in a kindergarten-first grade class. Important decisions such as these must be made early and availability of normative data would help make these decisions wise ones.

One way to increase the possibilities for establishing successful programs for young children is the utilization of a carefully designed pre-kindergarten screening procedure. It was to this end that this project was undertaken.

Research Questions to be Answered

After developing an instrument that would meet the criteria in the statement of the problem, several

fundamental questions would remain. First, how do results obtained by the new instrument compare with the results from other frequently used readiness tests with proven validity and reliability?

To answer this question, scores obtained by the new instrument will be compared using the Pearson R correlation with scores from the Metropolitan Readiness Test (Hildreth, Griffiths, & McGauvran, 1933) and the Test of Basic Experiences (Moss, 1970) to prove or disprove the following null hypotheses:

1. There is no significant difference between the raw scores obtained on the new screening instrument and the raw scores obtained on the Metropolitan Readiness Test.

2. There is no significant difference between the raw scores obtained on the new screening instrument and the raw scores obtained on the Test of Basic Experiences.

A second question of importance to be answered is, What is the test-retest reliability of the new instrument? Another important question that needs answering is, How well does the new instrument predict readiness when compared to teacher readiness ranking made several months after pre-entry screening? Finally an answer to this question, How well does the new instrument discriminate among the five areas of needs which make up the new

screening instrument? Answers to these questions have relevance to the expected use of this instrument by schools for obtaining accurate and reliable pre-kindergarten entry data necessary to detect the deficiencies, strengths and needs of children and to help provide individualized programs for them.

Definitions of Terms Used

Pre-Kindergarten Children

Children who will enter kindergarten the next school year.

Readiness

". . . the adequacy of existing capacity in relation to the demands of a given learning task" (Ausubel, 1959, pp. 245-254).

Screening

The identification of existing vision, hearing or speech difficulties through the use of tests.

Assessment

Evaluation of a child's strengths and weaknesses in areas related to the curriculum.

Verbal Knowledge

The general reasoning ability a child shows when he verbalizes general information, concepts and prior

experiences.

Auditory Discrimination

"Recognition of fine differences that exist between phonemes used in English speech" (Wepman, 1958).

Visual Motility Screening

Observation of a child's eyes working together and individually.

Motor Development and Integration

A child's ability to perform coordinated movement.

Chapter 2

REVIEW OF THE LITERATURE

A review of the literature relevant to this project has been divided into three major areas: (1) definition of readiness, (2) the need for assessing pre-kindergarten readiness, and (3) current assessment programs.

Definition of Readiness

According to Dolores Durkin (1972), the term "reading readiness" first appeared in professional literature in the 1920's (p. 36). Early proponents were concerned primarily with maturation. Later researchers introduced the mental age concept of readiness and concluded that mental age alone showed a higher degree of correlation with reading progress than did IQ or chronological age (p. 40). Today more and more researchers recognize that maturation alone is not enough. The influence of the environment and its relationship with each individual must also be considered as key factors in readiness to read.

A precise definition of readiness is by Ausubel (1959) in the Teachers College Record. "Readiness,"

according to Ausubel, "is the adequacy of existing capacity in relation to the demands of a given learning task" (pp. 245-254).

Durkin (1970) is in agreement with Ausubel when she defines readiness as "various combinations of abilities that result from nature and nuture interacting" (p. 38). The preceding definitions suggest some obvious implications for school assessments of a child's readiness. For instance, assessments which use a single-factor criterion such as chronological age or mental age, are over-simplifying a complex task.

"When neither age nor intelligence was found fully adequate as a school-entrance criterion, educators became concerned about finding other possible measures of a child's readiness" (Ilg & Ames, 1965, p. 17).

Harris (1970) helped clarify the problem of the myriad of interconnected traits by suggesting the following as important in ascertaining a child's readiness. They are:

> . . . age, sex, general intelligence, visual and auditory perception, physical health and maturity, freedom from directional confusion, background of experience, comprehension and use of oral English, emotional and social adjustment, and interest in reading. (p. 21)

In an investigation of similar readiness traits, Stone and Church (1973) found that readiness to learn depended at least as much on prior experience as on any

identifiable maturational state and that readiness can be seen as the beginning of a "critical period." They also stated it was important for people dealing with pre-kindergarten youngsters to have a general notion of developmental sequences (pp. 162-163).

The developmental approach to child study has been the focus of the bulk of Arnold Gesell's (1946) work. He cited the various capabilities of children and the age range at which they occurred. His methodology was mainly observational, longitudinal, and normative in nature. Ilg & Ames (1965) stated,

> . . . in fifty years of experience in the use of a battery of developmental tests, it has been shown that the child's developmental level can be determined through the use of such behavior tests. (p. 18)

The Need for Assessing Pre-Kindergarten Readiness

According to Moore and Moore (1972), children should be carefully screened for physical, psychological, emotional and other abnormalities, and where disability is noted there should be intervention as soon as practicable.

The need for assessing the readiness of pre-kindergarten youngsters is not a concern solely of educators alone, pediatricians are extremely interested in such assessments and many of them utilize them in their practices. The Denver Developmental Screening Test is

just such an assessment that was authored by W. K. Frankenburg, M.D. and J. B. Dodds, Ph.D. (1970). It was developed to screen infants to six-year-olds in the areas of gross motor, fine motor, language and personal social development. In a presentation to the American Academy of Pediatrics, Col. George Fidone (1973) noted that children who fail in school are to a large extent identifiable in the pre-school years. He emphasized the necessity of careful assessment of a child's readiness prior to commencement of school. He also strongly suggested that once identified, a coordinated plan of management and programming be devised for the child to eliminate educational failure.

Special educators also are interested in this problem of early assessment. Weiner (1972) in his report on "Special Education for Normal Kindergarten Children With Subtle Developmental Learning Delays," concluded it was important to note that no single test or combination of tests were of great value in screening participants. Rather the skilled observations and judgments of a well-trained multi-disciplinary staff proved more discerning. There is support, therefore, for utilizing skillful diagnosticians and their experiential services in evaluating children rather than seeking a panacea in a particular battery of tests. Also there is evidence to support attention to learning problems at an early age before the

child is lost into the mainstream educational program.

The problem of assessing growth related to school experience is a complicated one. Many factors such as emotional experiences, home and school environments, and health, influence a child's growth. Also the person doing the assessing may be a factor in accurately evaluating the child. Much assessment in kindergarten is subjective. It is affected by the teacher's experience, personality, perceptions, and skill in observation. Once an assessment is made, it may become an influencing factor in the future growth of the child. (Mindess, 1972)

The Kindergarten Screening Manual (1973) for the Title III, ESEA Project in Peotone, Illinois contains the following statement on assessment,

> . . . the effect of screening (and its resultant educational planning) on the child is of paramount importance. It is through the screening methods that schools can begin to build a system in which a child need never experience the pain of school failures. (p. 2)

As a result of her study, Ann E. Boehm (1971) stated that some of the major purposes of assessment are to:

> Measure those aspects of children's functioning which appear related to later school success. Utilize measures in a diagnostic manner so that levels of children's functioning can be determined with regard to strengths and weaknesses. Provide information to teachers which will help them modify and/or develop curricula to meet the specific needs of children. (p. 523)

The areas that Boehm (1971) found necessary to assess were: cognitive development, approach to learning, physical-motor development, and verbal expression as well as observational reports of social and emotional growth (pp. 523-527).

Current Assessment Programs

In her book, Diagnostic Teaching of Reading, Ruth Strang (1969) published a suggested list of tests to be used at pre-school and kindergarten level. She suggested observation of children's responses to informal exercises in auditory and visual perception, discrimination, memory and sequencing, vocabulary and speech (p. 292).

Another battery currently being used is The Early Education Screening Test Battery of Basic Skills Development. This battery of tests was derived from research done at University City School District, Missouri. It is a thirty minute screening battery of tests measuring the areas of cognitive, motor, auditory, visual, visual-motor coordination and language development that attempts to provide an economical assessment of four to six-year-olds.

Margaret E. Green (1969) reported on the development of a pre-school readiness inventory devised and utilized in the Chula Vista City School District and standardized on approximately 2,000 youngsters. She found the inventory to have a high correlation with the

Metropolitan Readiness Test. Among the many benefits derived from the use of a pre-school inventory she listed: discovering the children who appear to need further diagnosis by speech and hearing specialist, opportunity for individual testing by school psychologist, and examination by the school nurse. She, also, stated that it is very important for the teacher to get well-acquainted with the child through a personal interview.

The Readiness Checklist devised in the Las Cruces School District serves as a diagnostic tool and to discover children in need of immediate remediation. The checklist covered the seven main areas of general health, movement patterns, muscular coordination, auditory skills, visual skills, speech, personal independence and social adjustment. According to Taylor (1972), the philosophy motivating the development of this checklist was that children in their early years show a remarkable difference in physical maturity between peers of equal chronological age. Thus the decision to enter a child in pre-school, kindergarten or first grade must take into consideration his physical as well as mental maturity.

Hockman (1972) reports on a project that involved early identification of developmental problems in pre-school youngsters. These problems, if intercepted early enough, could be alleviated and enable many of the children to make normal school progress. Data from this project

indicated that a program of early identification with subsequent special programming did have beneficial effects on a child's readiness.

In a report on Developmental Kindergarten Classes, Robert Abbott (1972) pointed out that each entering kindergarten child is a different individual with unique experiences, background, home life, learning style, needs and abilities. He stated that effective educational planning must take into account all of these varied factors. Additionally, Abbott pointed out there is an increase in public awareness of the importance of early education. He noted that many professional individuals such as physicians and special education personnel are most interested in early detection of problem children and the subsequent corrective or remediation services. He noted the great waste of variable time caused by waiting until a child has failed before offering remediation. Often the price of neglecting early detection and waiting for failure to occur has resulted in the complication of the problem through the addition of emotional or other factors resulting from the failure syndrome.

Jordan and Massey (1967), authors of the School Readiness Survey, found as a result of their studies that ideal course of action to detecting lack of school readiness would be to develop a team approach to look at the child through many professional eyes. They recommended

a team of experts, including a speech therapist, a teacher, a principal, a psychologist, a nurse, a social worker, and if available a pediatrician. After a child had been observed or tested by each of these experts consultation would be made with the parents. Jordan and Massey also reported that the parents were very pleased to learn more about their children's abilities and disabilities and were eager to begin programs of stimulation and remediation that would prepare their children for a more successful school career.

Ilg and Ames (1965) concur regarding the importance of involving the parents. They recognized that parents on the whole are deeply interested in the education of their children. They suggested that close cooperation between the parent and the teacher in the early school years may determine the entire course of the child's education.

Summary

Authorities seem to agree that there are many interconnected traits that make up readiness for school, with prior learning being one of the most important. The evidence seems clear that a single criterion for school readiness such as chronological age is inadequate. Developmental differences between children of the same chronological age make each child unique and necessitates

individualized school programming.

Both pediatricians and educators appear to be concerned about the present practice of discovering school problems after a child has had years of failure and difficulties. They suggested early prevention through assessment and pre-kindergarten screening and subsequent class programming as possible solutions to eliminate later learning problems.

The research of Green, Hockman and Abbott illustrated the extent to which educators in all sections of the country are concerned with the successful use of pre-kindergarten screening techniques. It is interesting to note that all these researchers were concerned with a multi-disciplinary approach in assessment. None of them limited themselves to one criteria such as IQ or mental age, and although the labels for the areas assessed varied slightly, in general they were all concerned with assessing motor development, visual-motor coordination, speech and language, social knowledge, auditory and visual skills.

Finally, authorities such as Ruth Strang provide many suggested tests which can be used at pre-kindergarten level.

Chapter 3

DESIGN OF THE STUDY

The purpose of the project was to develop and apply an instrument for obtaining entry data on children enrolling in kindergarten. The project was conducted as action research involving a school principal, kindergarten teacher, and the researcher which constituted what became known as "the Kindergarten Committee."

Development of a Screening Instrument

Early in 1973, the researcher met with the principal to hear his basic concerns about children entering school. First, he asked, "Could a true measure of a child's readiness be determined to guide the teacher in developing an individualized kindergarten program?" Second, "Could a single instrument be devised which would assess visual, auditory, psychomotor, and social developments of a child at the time of entry into kindergarten that would also be inexpensive, easy to administer and score, and capable of producing accurate data?" This second question stated the criteria to be followed in designing the instrument.

The Kindergarten Committee reviewed twenty-two published readiness tests. The committee found that many of the tests reviewed were designed to test children at the end of kindergarten and the beginning of first grade. These tests were eliminated. Although several tests among those remaining would assess the visual, auditory, psychomotor and social development of the child they had to be eliminated on the basis of excessive cost and availability. One test, the Valett Developmental Survey of Basic Learning Abilities by Robert E. Valett (1966) was selected by the Kindergarten Committee as the most comprehensive. This test assessed the areas of motor integration and physical development, perceptual abilities, language, social-personal adaptivity, and general intellectual functioning. The committee decided to follow the example of this test which used a multi-disciplinary approach to bring together various well-validated instruments. Most of the other readiness instruments suffered from what Rude (1973) chose to point out as "measuring only a limited number of reading readiness skills. Attention span, cognitive learning style and experiential background are not included in five of the most commonly used reading readiness tests" (p. 579).

It was decided after the review of these instruments to move ahead to develop a screening instrument that would bring together only items from validated instruments

and items that were already normed for populations similar to those in the neighborhood of the principal's school.

The review of readiness instruments by the Kindergarten Committee had resulted in a determination of the categories or areas to be included in the new screening instrument. The five categories selected were:

1. Motor integration and motor development
2. Visual-motor coordination
3. Auditory discrimination and hearing
4. Visual motility and eye dominance
5. Social development

Later that year the kindergarten committee was augmented to include the speech teacher, the learning assistance teacher and the school nurse. Each of the five categories was reviewed by the new Kindergarten Committee and the following rationale and decisions were made regarding each of the five categories.

Motor Integration and Motor Development

Support for inclusion of this area came from such noted researchers as Frostig, Kephart, Getman, and Simpson. In her book Learning to Learn, Simpson (1968) categorized the levels of motor skills needed at the kindergarten level. The recording form developed by the committee was based on her levels of motor skills.

Visual-Motor Coordination

Simpson (1968) reported research correlating a group of readiness scores achieved by second and third graders when in first grade, with their reading achievement test scores at the end of second and third grade. The sub-test on copying was found to correlate more highly with reading achievement than either the sentence meaning or information subtest. The ability to copy or reproduce printed forms appeared to correlate more closely with success in reading than had been realized (p. 76).

Gesell's copy forms test and incomplete man test were chosen by the Kindergarten Committee to give an indication of the child's visual-motor coordination which would provide the copying information that Simpson had indicated was so important in predicting future reading success. In addition to the Gesell copy forms some of the Bender Gestalt copy figures were included. Support for inclusion of these extra figures came from the research of Koppitz and Belgau who stated:

> . . . that copying of Gestalt figures reflects the maturation level of visual-motor perception and that visual-motor perception is closely related to language ability and other functions associated with intelligence in young children. These include memory, visual perception, motor coordination, temporal and spatial concepts, organization and representation. (Koppitz, 1965, p. 45)

A great deal about a young child's intellectual development and personality development can be learned

through study of the kind of image he has of himself. "Most good pre-school tests include a draw-a-man test because the child's picture of a man is a projection of one facet of the many facets of his own body image" (Belgau, 1972, p. 4). Although, Gesell's Incomplete Man Test was selected for this draw-a-man task, Goodenough's Draw-A-Man Test could be substituted and give an equally satisfactory result.

Auditory Discrimination and Hearing

The Monroe Wepman Test was found suitable for use as a simple auditory discrimination test. Included in this category was an audiometer test to discover children with hearing problems. Support for inclusion of these tests came from the research of Flower (1969) who stated that data from his study indicated many of the tasks that must be mastered before a child can read successfully rely heavily upon auditory processes. Auditory perception must be assessed independently in order for adequate classroom programming to occur.

Visual Motility and Eye Dominance

Dorothy Simpson's book, Learning to Learn provided a visual motility test for judging binocular coordination. Support for inclusion of visual motility testing, as well as lateral dominance came from Kephart (1960), whose work has dealt with remedial training for children who lack

readiness to begin school. The optometrist Getman (1962) also stressed the importance of visual development.

It was decided to include the V-shaped tube test for eye dominance. Through the use of a simple V-shaped tube a trained individual can determine the dominant eye of the child. According to Bond and Tinker (1967) this homemade cardboard V-shaped tube will yield reliable results in determining eyedness. Directions for construction of such a tube and administering the test can be found in Reading Difficulties: Their Diagnosis and Correction (p. 122).

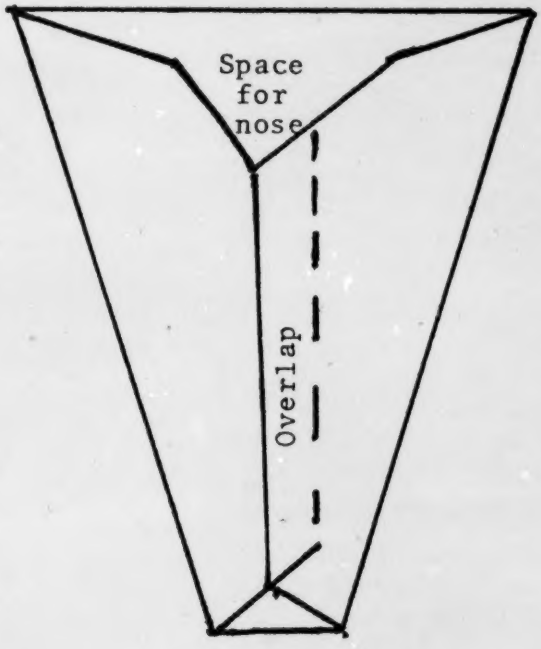

Figure 1

V-Shaped Tube for Determining Eyedness

This dominant eye information would later be compared with the dominant hand and foot that are determined in the motor skills assessment. According to Harris (1971),

> . . . learning the left-to-right sequence needed for reading is easiest for the consistently right-handed child . . . and hardest for those who have not yet developed a consistent preference for either hand. (p. 28)

He concluded that directional confusion and mixed handedness have some bearing on reading ability.

Social Development

This category includes language development, verbal knowledge, experiential background and attention span. To obtain an indication of the child's verbal knowledge the IQ normed questions from the Slosson (1963) and Stanford-Binet Intelligence Tests (1960) were selected. For an interview to assess language development the committee turned to Ilg and Ames Initial Interview (1965, p. 41). This short interview gives information about a child's level of intelligence, powers of organization and experiential background.

Sources for the items selected in each of the five areas described with anticipated time needed to administer each category are given in Table 1.

Other Considerations

Questions covering basic skills to provide information of interest to kindergarten teachers such as naming

Table 1

Components of the Screening Instrument

Area Measured	Test	Approx. Time
Social Development	Ilg & Ames Interview	5 minutes
Verbal Knowledge	Slosson/Stanford Binet	5 minutes
Visual-Motor Coordination	Gesell Copy Forms Incomplete Man	10 minutes
Language Sequencing	Riley Articulation	2 minutes
Visual Motility	Airplane Pencil	
Eye Dominance	V-Shaped Tube	3 minutes
Hearing	Audiometer	5 minutes
Vision	Monroe-Wepman Snellen Eye Chart	
Motor Development	Simpson Motor Skills	5 minutes

colors, counting, one-to-one correspondence, left to right sequencing, laterality, directionality, analogies and critical thinking were incorporated into the screening instrument.

Since speech is also a social skill, the committee was concerned about locating children with speech disorders. The speech teacher on the committee suggested the sub-test on language sequencing in the Riley Articulation and Language Test as a useful quick screening test. The committee found that this simple test when supported by the notation of the examiner of observed baby talk, stuttering or speech difficulties would serve as an excellent pre-screening device.

As a final step in the process, an easy to read profile form was devised to record results from each of the five categories.

When the committee was agreed which measures would constitute the screening instrument, it gave its attention to two other considerations: (1) the inclusion of provisions for locating children in educationally high risk categories, and (2) forms for recording data pertinent to locating high risk children such as children who were born pre-maturely. A parent information questionnaire was devised to collect information about a child's birth. Data by De Hirsch and others, reported by Fidone (1973), indicated that "pre-matures, especially males are at high

risk for academic failure" (p. 4).

Dr. Fidone (1973) also cautioned educators and physicians to be on the alert for under-developed children who have delay development in many areas crucial to school readiness. As he put it,

> Their motility, coordination, academic performance and maturity are out of concert with their classmates. We note that these children are unusually prone to acquire neurological labels early in their school years, to be given anti-hyperkinetic drugs and to be placed in special education classes for brain-damaged children. The ease with which this occurs in our present educational system is as remarkable as it is frightening. (p. 4)

Recording forms were developed by the Kindergarten Committee. The secretarial staff produced masters and ran off the new screening instrument. It was decided to call the newly devised instrument the Casey-Monahan Screening Instrument and hereafter it will be referred to as the CMSI for brevity. The committee also was agreed that a high priority would be given to making sure that only well-qualified individuals conducted the screening and that training should be given to all individuals involved.

Summary

The Kindergarten Committee after determining the categories to include in the screening instrument selected the test items most appropriate for the purposes to which the instrument would be used and developed a recording and

record keeping system to use in its administration. Each of the categories consisted of test items of proven validity and reliability.

The final product resulted in a thirty minute, low cost, easy to administer instrument consisting of tests and subtests representing available normed materials. The final selection of test materials included measures of social development, verbal knowledge, language development, visual-motor coordination, auditory discrimination, visual motility, eye dominance and motor development.

Chapter 4

APPLICATION OF SCREENING INSTRUMENT

It is the purpose of this chapter to describe how the Casey-Monahan Screening Instrument (CMSI) was field tested. The pilot study was at Springview School in Ocean View School District, Huntington Beach, California and field testing followed in five other schools in the district.

Subjects

The subjects were 350 pre-kindergarteners. The children came primarily from middle-income families located in the attendance area of five schools in Ocean View School District. Their selection depended on a teacher and the principal jointly agreeing upon need for assessment of an individual child. In order to participate in the screening each school was committed to follow the research design in both administration of the screening instrument and subsequent individualized program planning.

Orientation of Parents

In the late spring of 1973, parents were notified to register their pre-kindergarten children at the school.

A kindergarten tea was arranged for the parents. The tea offered them an opportunity to meet the principal, the teachers and the screening personnel as well as receive an orientation to the screening procedures.

The principal explained that the results of the screening would be a valuable aid to help teachers individualize each child's program. Parents were assured that the screening was to assess strengths and weaknesses and not a pass/fail type test. At the tea, parents were asked to sign up for the time and date they would bring their children to be screened. Also, they were given the Parent Survey Form to be completed and returned when they arrived for their screening appointment. A postcard was sent several days before the screening, reminding the parents of the hour and date of their appointment.

Organization of the Screening Procedure

The screening procedure was organized into four stations. Each station was equipped with personnel and materials to assess certain categories of skills.

In order to screen at least 55 children in a two day period it was necessary to utilize three trained individuals at Station 1 who were referred to as interviewers. Children were assigned to appointments with particular interviewers. Therefore, during each twenty minute time slot, three children were being interviewed

at the same time.

The interviewer would also be the person responsible for the final evaluation done on each child they interviewed. The personnel operation Stations 2, 3 and 4 were referred to as examiners and they recorded their observation of the child and consulted with the interviewers at the end of the day and before the final evaluations were made. The personnel and materials used at each station are illustrated in Figure 2.

Station 1--The Interview

A twenty minute interview was the first step in the screening procedure. The interview took place in the school offices in individual, quiet rooms equipped with child size desk and chair.

Before proceeding through the stations the parent and child were consulted to determine whether or not the parent would be with the child during the interview and at each station. In general, the interviewers preferred not to have the parents with the child in order to avoid parent influence upon the child. They found it easier to establish the needed rapport with a child when the parent was not present. Exceptions were made when parents or children insisted and when it was apparent that for very dependent children the parents presence was necessary.

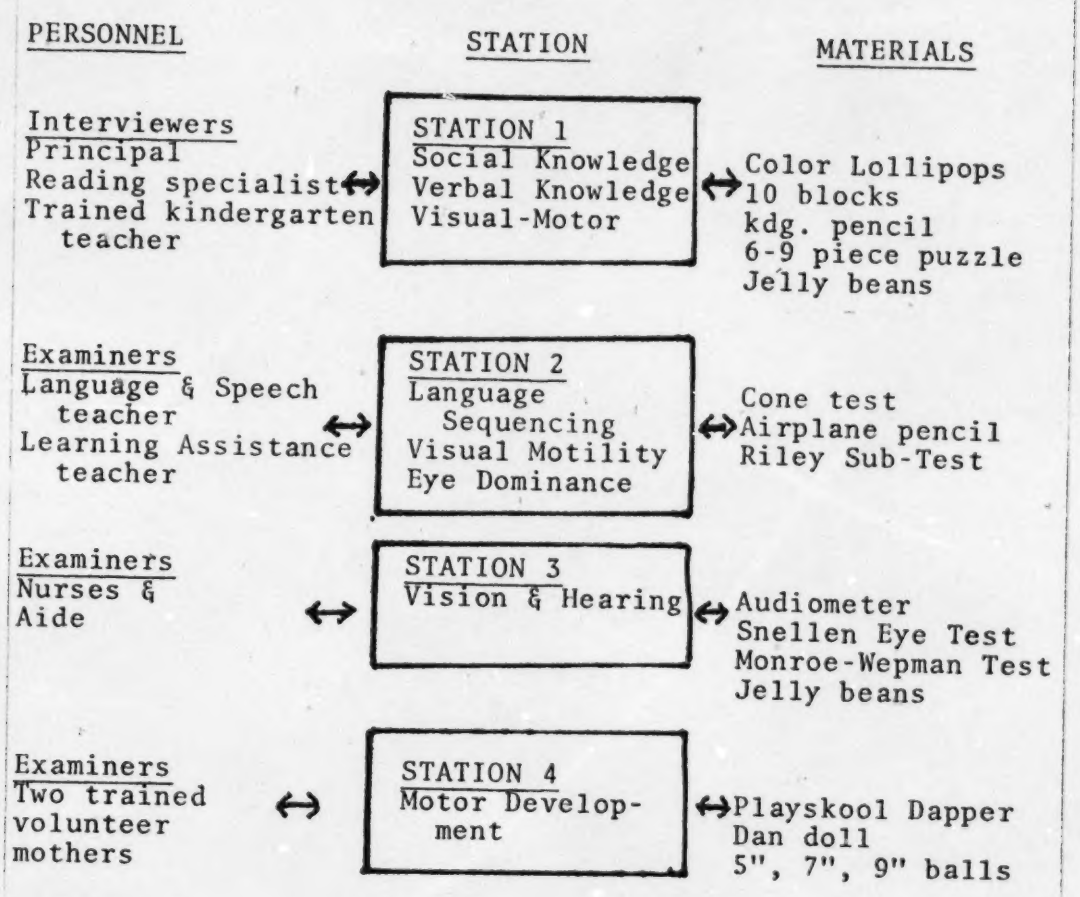

Figure 2

Organization of Screening Procedure

The purpose of the interview at Station 1 was to put the child at ease and gather information about the child's social development through the use of the Ilg and Ames Initial Interivew, verbal knowledge through the use of Slosson/Stanford-Binet IQ questions and visual-motor coordination through the use of Gesell Copy Forms and Incomplete Man Test.. It was conducted as much like a game as possible using test sheets, pencils, blocks, color lollipops, a six-eight piece puzzle, and jelly beans for a reward at completion. The interviewers assessment of skills tested were recorded and notes were made on how the child was affected by the interview situation.

Station 2--Visual Motility and Language Sequencing

Following the twenty minute interview, the child and parent took the child's folder to Station 2. This station was located in the language and speech teacher's room where the language and speech teacher and the learning assistance teacher administered tests of language sequencing, visual motility and eye dominance. Materials at this station were the Riley Articulation and Language Test, cardboard airplanes pinned on pencil erasers for visual motility test, and V-shaped tube for testing eye dominance.

Station 3--Auditory Discrimination, Hearing and Vision

Station three was located in the nurse's office where the nurse and her trained aide administered the Monroe-Wepman Auditory Discrimination Test, Audiometer Hearing Test and Snellen Eye Test. Materials used at this station were: Snellen Eye Chart, Wepman Test, Audiometer and jelly beans for rewards.

Station 4--Motor Development

Station four was located on the playground. Two trained volunteers administered a motor skills test. Materials at this station consisted of three different sized balls, five, seven and nine inches, a Playskool Dapper Dan doll and balloons for rewards.

Recording Keeping

All the forms used in the screening process were placed in each child's folder prior to the screening appointment. The folders were color-coded to designate the child's interviewer who would make the final review of data collected and conduct the follow-up interview with the parent.

The folder was carried by the child from station to station where the examiners recorded results of the tests and assessments. The folder was retained by the

examiner heading Station 4.

Review and Evaluation of Screening Results

To obtain complete information, space was provided on all forms for comments by the examiners at each station in the screening procedure. At the close of the day, the interviewers reviewed their folders and wrote a summary of the information contained in the folder. They also plotted test scores on a profile chart in each child's folder.

The interviewer noted on the outside of each folder whether the child needed further evaluation from the speech-language teacher or required a recheck in any areas of the screening. The interviewer also made notes of any recommendations for class grouping, especially those who would benefit from a pre-kindergarten or combination type classroom.

Follow-Up Parent Interview

After information in the folders was reviewed and evaluated, appointments were made with parents to meet with the interviewer to go through their child's folder. In discussing the findings obtained by the screening process with the parent, the interviewers stressed that these findings were assessment of the child's

present development in the five areas tested and they would be used to provide a more individualized program designed to meet the specific needs of the child.

Summary

Three hundred and fifty children were screened with the newly developed instrument which was named the Casey-Monahan Screening Instrument. The screening procedure was organized into four major stations:

1. Station 1 for the assessment of social and verbal knowledge and visual-motor coordination.
2. Station 2 for assessment of language sequencing, visual motility and eye dominance.
3. Station 3 for screening of vision and hearing.
4. Station 4 for assessment of motor skill development.

At the completion of the screening procedure, each child's folder was reviewed and evaluated by the interviewers. After which a conference was arranged with the parents to go over the results of the screening. The completed folders were then used by the kindergarten teacher and principal as the basis for planning individualized programs.

Chapter 5

RESULTS OF RESEARCH QUESTIONS

The purpose of this project was to produce an expeditious screening instrument that would yield pertinent information about a child's individual development prior to entering kindergarten.

In order to test the validity of the instrument used in this project it was compared to two well-known instruments: the Metropolitan Readiness Test and Test of Basic Experiences. Both of these instruments have well established reliability and validity and that was one of the reasons they were chosen. Another reason for their selection was that they were readily available to the schools involved in the study.

Test results obtained by use of the Casey-Monahan Screening Instrument were analyzed with the aid of a 445 Statistician Compucorp calculator. These data were correlated on a total of 101 students who were examined by the CMSI; fifty-seven of whom were given the Metropolitan Readiness Test and forty-four of whom were given the Test of Basic Experiences. The raw scores obtained by these instruments were compared using a Pearson R correlation.

Discussion of Findings by Hypotheses

Two hypotheses were tested and implications of the factors studied were discussed. All of the relationships reported and tabulated were tested for significance at the .01 level of confidence.

The first hypothesis examined the relationship between the scores on the CMSI given at the beginning of the school year and the scores on the Metropolitan Readiness Test. The scores on both of these instruments purported to measure an indication of a child's readiness for school.

Results showed a Pearson R correlation of .7540 between the raw scores of the Metropolitan Readiness Test and the raw score gained by the screening instrument. This correlation was significant at the .01 level and indicated that the two instruments were in close agreement with each other.

The second hypothesis examined the relationship between the scores on the new instrument given at the beginning of the year to 44 youngsters and the scores achieved by the same youngsters on the Test of Basic Experiences administered one week after the CMSI.

The Pearson R correlation on these two sets of raw scores was .6172 which for a df of 44 was a significant

correlation at the .01 level. Therefore, the null hypothesis was accepted because there were no significant differences between the raw scores of either instrument as shown in Table 2.

Table 2

Pearson R Correlation of CMSI with MRT and TOBE

Test	df	Pearson R	Degree of Significance
Metropolitan Readiness Test Compared to CMSI	57	.7540	.01
Test of Basic Experiences Compared to CMSI	44	.6172	.01

Test-Retest Reliability

To test the reliability of the CMSI, it was administered to seven students one week after they had initially been screened using different examiners. In all cases the raw scores on the second CMSI produced the same total rating score obtained on the initial screening. These data as shown in Table 3 indicate that the new instrument did have a test-retest reliability.

Table 3

Test-Retest Scores on CMSI

Child	Raw Score		Total Score	
	Administration of Screening		Administration of Screening	
	1st	2nd	1st	2nd
1	25	22	3	3
2	21	23	3	3
3	32	35	2	2
4	46	45	1	1
5	47	44	1	1
6	35	33	2	2
7	50	48	1	1

Teacher Judgements

Researchers Jordan and Massey (1967) found correlations to be high between teacher ratings and the scores obtained on their School Readiness Survey. They substantiated the validity of their survey by comparing teacher ratings obtained after three and one-half months of school with the predictive score of their survey rating. A correlation of .39 was obtained which they reported to be significant beyond the .01 level (p. 11). Table 4

illustrates the percentage of agreement or disagreement between the predictive score on the Casey-Monahan Screening Instrument and teacher's rating taken three and one-half months after school had begun. Teachers selected were not acquainted with the CMSI score. Table 4 was compiled by comparing the results achieved by 42 boys and girls on the CMSI as compared to ratings made by their teacher three and one-half months later. The teachers were instructed to rank the children from 1-3: (1) exhibiting a high degree of readiness, (2) an average degree of readiness, and (3) a low or high risk category of readiness. The total score rating on the CMSI is also in this same 1-3 ranking. Eighty-seven percent of the teacher ratings of boys agreed with the predictive screening ratings. The CMSI ratings were available three and one-half months prior to the time teachers needed to make a judgement about the readiness of the children. This is a significant saving of time for the teacher and enables her to tailor the program to individual needs much more quickly than she could without the instrument ratings. In addition, the children that the teachers ranked as high risk or low readiness were often discovered by teacher judgement, but further testing or specialist help was still required to pinpoint the specific area of need for this high risk student. Specific areas that the screening instrument would have detected for her.

Table 4

Agreement Between Teacher Judgements and CMSI Ratings

Number	Percent Agreement	Percent Disagreement
Boys 25	87	13
Girls 17	94	6

Specific Areas of Need

A screening instrument would be of little value if it were simply an exercise in identification of needs alone. It was essential that teachers participated in the screening and were given complete lists of names of children who exhibited specific strengths and weaknesses in each tested area so that subsequent individualized programming could occur. The teachers of all 350 youngsters screened in this project received complete lists of children with strengths and weaknesses in each area. The teachers received this information immediately after the screening evaluations had been completed except in the case of the forty-two youngsters chosen for the teacher judgement study (Table 4). The teachers of these youngsters received the information on them after they had made their ratings of the children.

Gertrude Wyatt (1965) who studied children with normal to superior intelligence identified 12.9 percent of them as having perceptual, motor or language problems. Table 5 shows the percent of students exhibiting areas of need in motor, auditory, visual, language or other areas as found in the administration of the new screening instrument to 156 students. Data based on results of 156 students' responses to new screening instrument are as follows:

Table 5

Areas of Need

Area of Need	Number	Percent
Motor Coordination	27	17.3
Auditory	12	7.7
Visual	4	2.6
Language Sequencing	15	9.6
Mixed Dominance	19	12.2
Visual Motor	31	19.9
Verbal Knowledge	18	11.5

Summary of Findings

This chapter has presented the results and data obtained through this study. These data indicate that a

preliminary screening instrument that was inexpensive, and simple to administer can also provide teachers with accurate information about entering kindergarten children.

Acceptance of the two hypotheses would indicate that the information from the new screening instrument was as accurate as that obtained by other well-validated readiness instruments.

First, the null hypothesis that there were no significant differences between the raw scores on the CMSI and the Metropolitan Readiness Test was accepted since between them a high .01 level of correlation was obtained.

Second, the null hypothesis that there was no significant difference between the raw scores on the Test of Basic Experiences and CMSI was also accepted because a .01 significant correlation was also established.

The test-retest reliability of the CMSI was found to be adequate on the basis of students screened one week after the initial screening by different examiners.

Teacher judgements made three and one-half months later were in high agreement with the new screening ratings. The CMSI ratings, however, were available much earlier and were as accurate as teacher judgement.

Based on the results of screening 156 students the

areas of greatest need were visual-motor and motor coordination.

Chapter 6

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

This project was undertaken to devise and utilize a screening instrument that would provide information about pre-kindergarten children in the areas of motor integration, visual-motor coordination, auditory discrimination, hearing, visual motility, eye dominance and social development.

Development of Instrument

A school-level kindergarten committee selected tests to be utilized in measuring each of the above areas. The tests chosen were from various validated tests normed on similar populations. The committee also developed recording and record keeping systems to use in the administration of the instrument. The final product resulted in a thirty minute, low cost, easy to administer instrument consisting of tests and subtests representing available normed materials.

Application of Screening Instrument

Three hundred and fifty children were screened using the newly developed Casey-Monahan Screening

Instrument. The procedure was organized into four major stations each equipped to assess different areas of development. Station 1 for assessment of social and verbal knowledge as well as visual-motor coordination. Station 2 for assessment of language sequencing, visual motility and eye dominance. Station 3 for screening of vision and hearing. Station 4 for assessment of motor skill development. Finally, the screening results were reviewed, evaluated by the interviewers. The parents were then informed of the results. The completed results were then used by the kindergarten teachers as the basis for planning individualized programs.

Research Findings

To insure that the new instrument was actually assessing facets of a child's school readiness, the results of the newly developed screening were compared with scores obtained on the Metropolitan Readiness Test and Test of Basic Experiences. The data indicated a .01 correlation between the raw scores of the new instrument and the two instruments used for comparison.

Further validation of the new screening instrument was obtained in a test-retest situation and through a comparison of teacher judgements made after three and one-half months of school. The screening information was available long before a teacher was able to formulate her

judgement about the child. This is an important advantage to both teacher and child.

The greatest areas of need discovered were in the areas of visual-motor coordination and motor coordination.

Conclusions

The following conclusions were developed from this study:

1. An inexpensive, easy to administer, reliable pre-kindergarten screening instrument can be devised by school personnel and used to reveal the educational needs of pre-kindergarten children.

2. An instrument such as the CMSI can save valuable instructional time for both teacher and child by providing an accurate picture of the child's needs prior to school entrance.

3. This instrument can be as accurate as teacher judgement.

4. An instrument composed of portions of many validated instruments can have its own validity.

Recommendations

On the basis of having conducted 350 screenings utilizing the Casey-Monahan Screening Instrument, the following recommendations are made:

1. It is recommended that future studies consider the development of a form of the Wepman Auditory Discrimination Test more suitable for administration to pre-kindergarten youngsters who have difficulty with the concept of same and different required in this test.

2. It is recommended that a more thorough eye screening be included in future research, possibly substituting the Keystone Telebinocular or later methods for the Snellen Eye Chart.

3. It is recommended that inclusion of techniques for early identification of children with dyslexia would be very beneficial.

4. It is recommended that a bi-lingual, culture-free form of a screening such as the CMSI be developed for use with children of other cultural backgrounds.

5. Finally, it is recommended that further research expand this pre-kindergarten screening approach into the development of district screening centers. These centers would be places where parents could bring their four-year-olds for complete diagnosis by many professionals, ie., speech teacher, psychologist, nurse, pediatrician, reading specialist and kindergarten teacher.

REFERENCES

Abbott, R. Developmental kindergarten classes of the Waukegan Community Unit School District. Springfield, Illinois: State Office of Supt. of Public Schools, 1972. (ERIC Document Reproduction Service No. ED 080 204)

Ausubel, D. P. Viewpoint from related disciplines, human growth and development. Teachers College Record, 1959, 60, 245-254.

Belgau, F. A. Synchronized audio-visual-tactual-kinesthetic multi-sensory programmed learning system demonstration. La Porte, Texas: Perception Development Research Associates, 1972.

Boehm, A. E. One model for developing a pre-kindergarten assessment program. Exceptional Children, 1971, 37, 523-527.

Bond, G. L., & Tinker, M. A. Reading difficulties: their diagnosis and correction. New York: Appleton-Century-Crofts, 1967.

California Assembly Bill 3976. California State Assembly, 1975.

De Hirsch, K., Jansky, J., & Langford, W. Predicting reading failure. New York: Harper & Row, 1966.

Durkin, D. Children who read early: two longitudinal studies. New York: Teachers College Press, Columbia University, 1966.

_____. Teaching them to read. Boston: Allyn and Bacon, Inc., 1970.

_____. Teaching young children to read. Boston: Allyn and Bacon, Inc., 1972.

Fidone, G. Precursors of school failure. Paper presented at the meeting of the American Association of Pediatrics, San Antonio, Texas, December, 1973.

Flower, R. The evaluation of auditory abilities in the appraisal of children with reading problems. Proceedings of the 12th Annual Convention, 1969, 12, 38-43.

Frankenburg, W. K., & Dodds, J. B. Denver Developmental Screening Test. Denver: Ladoca Project and Publishing Foundation, Inc., 1970.

Frazier, A. Early childhood education today. Washington, D.C.: Association for Supervision and Curriculum Development, 1966.

Gesell, A. L. The child from five to ten. New York: Harper and Bros., 1946.

Getman, G. N. How to develop your child's intelligence. Luverne, Missesota: Getman, 1962.

Green, M. E. Pre-school kindergarten reading inventory. Washington, D.C.: American Personnel and Guidance Association, March 1969. (ERIC Document Reproduction Service No. ED 032 599)

Harris, A. J. How to increase reading ability. New York: David McKay Company, 1970.

_____, & Sipan, E. R. Effective teaching of reading. New York: David McKay Company, 1971.

Hildreth, G. H., Griffiths, N. L., & McGauvran, M. E. Metropolitan Readiness Test. New York: Harcourt Brace & World, Inc., 1933.

Hockman, T. Focus on preschool developmental problems. Colorado Springs, Colorado: Colorado Springs Public Schools, 1972. (ERIC Document Reproduction Service No. ED 078 945)

Ilg, F. L. & Ames, L. B. School readiness. New York: Harper and Row, 1965.

Jordan, F. L., & Massey, J. School readiness survey. Palo Alto, California: Consulting Psychologists Press, 1967.

Kephart, N. C. The slow learner in the classroom. Columbus, Ohio: Charles E. Merrill, 1960.

Kindergarten Screening Manual. Unpublished paper, 1973. (Available from Peotone School District, Peotone, Ill.).

Koppitz, E. The Bender Gestalt Test for young children. New York: Grune and Stratton, Inc., 1965.

Mindess, D. M. Guide to an effective kindergarten program. New York: Parker Publishing Company, Inc., 1972.

Moore, R., & Moore, D. Early schooling for all? Congressional Record, October 1972, 118, E8726.

Moss, M. Test of basic experiences. California Test Bureau. New York: McGraw-Hill, 1970.

Rude, R. Readiness tests: implications for early childhood education. The Reading Teacher, 1973, 25, 579.

Simpson, D. Learning to learn. Columbus, Ohio: Charles E. Merrill, 1968.

Slosson, R. L. Slosson Intelligence Test. East Aurora, New York: Slosson Educational Publications, 1963.

Stone, L. J., & Church, J. Childhood and adolescence. New York: Random House, 1973.

Strang, R. Diagnostic teaching of reading. New York: McGraw-Hill, 1969.

Taylor, J. Readiness checklist. Washington, D.C.: Office of Education, 1972. (ERIC Document Reproduction Service No. ED 061 839)

Terman, L. Revised Stanford-Binet Intelligence Scale (3rd ed.). Boston: Houghton Mifflin Company, 1960.

Valett, R. The remediation of learning disabilities: Handbook of psychoeducational resource programs. Palo Alto, California: Fearon Publishers, 1966.

Weiner, L. Special education for normal kindergarten children with subtle developmental learning delays. Barrington, Rhode Island: Barrington Public Schools, 1972. (ERIC Document Reproduction Service No. ED 062 003)

Wepman, J. M. Wepman Auditory Discrimination Test. Chicago, Illinois: Language Research Associates, 1958.